



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION SITE REMEDIATION AND WASTE MANAGEMENT PROGRAM

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February 11, 2022

Sam Abdellatif
Land and Redevelopment Programs Branch
U.S. Environmental Protection Agency, Region 2
290 Broadway, 25th. Floor
New York, NY 10007-1866

RE: Amerada Hess Corp- Former Port Reading Refinery
EPA ID No. NJD045445483
750 Cliff Road
Woodbridge Twp, Middlesex County
PI#: 006148

Comment Letter: AOC 12: Smith Creek and Detention Basin

Dear Mr. Abdellatif:

The New Jersey Department of Environmental Protection (Department) has completed a review of the AOC 12: Smith Creek and Detention Basin submitted July 30, 2021. The document was submitted pursuant to the Site Remediation Reform Act (N.J.S.A. 58:10C-1 et seq.), the Administrative Requirements for the Remediation of Contaminated Sites (N.J.A.C. 7:26C), and the NJDEP Technical Requirements for Site Remediation at N.J.A.C. 7:26E.

The Department has the following comments:

General Comments:

1. The RI workplan is missing important information necessary to determine if the sample locations selected are appropriately addressing the contaminant migration pathways. Pursuant to N.J.A.C. 7:26E-4.8, this is the first step to start the remedial investigations. There are additional areas that need thorough sampling, as indicated in the following comments. The Remedial Investigation Report will need to address all the comments and adequate justification will need to be provided. If specific comments will be addressed in the RIR report, please indicate this in an official response to comments.

Once the RIR is reviewed, the Department may request additional sampling and documentation in order to achieve complete delineation.

2. Please note that sampling, including field sampling, and lab analyses needs to be conducted pursuant to the current Department Regulations and associated Technical Guidance documents.
3. It is recommended that all historic correspondence identified in Section 1 of the 2020 AOC 12: Supplemental Remedial Investigation Workplan be provided as an appendix to this RIW for transparency.

Specific Comments:

4. **Page 8, Section 3.1, Identification of Applicable Standards:** Hess is reminded that on May 17, 2021, the Department adopted amended Remediation Standards, see <https://www.nj.gov/dep/srp/guidance/rs/>. Regarding Hess's Identification of Applicable Standards, Hess shall utilize the May 17, 2021, Remediation Standards, in accordance with the Rule and associated Guidance's, including but not limited to the Phase-In/Order of Magnitude Guidance, which is found on the same weblink. As a reminder, Area of Concern 12 has not received a final remediation document. Therefore, Hess will need to compare the prior and future site data to the May 2021 Remediation Standards.

Regarding the Migration to Groundwater Pathway, the migration to groundwater standards are applicable in the vadose zone. It is not acceptable, without corresponding data at each sample location, for Hess to have assumed that the vadose zone throughout Area of Concern 12 is 4 feet below ground surface.

5. **Page 31, Section 6.0, Historic Fill:** The document includes a discussion of attributing PAHs and metals to historic fill. As previously discussed, contaminants of concern cannot be attributed to historic fill without sufficient evidence. Hess has noted that a historic fill evaluation document will be submitted in the future. At this time, contaminants attributed to historic fill cannot be accepted because justification has not been provided.
6. The RIW does not include enough information to characterize ground water and surface water interaction. The following information is requested:
 - a. Surveyed staff gauges in Smith Creek Pond and Smith Creek.
 - b. Sampling of ground water and Smith Creek Pond and Smith Creek surface water at peak low tide (which should be primarily ground water discharging to surface water).
 - c. Additional synoptic gauging at peak high tide and peak low tide for ground water-surface water interaction evaluation.
 - d. Tidal influence evaluation at off-site SC-, and perimeter area PER- and AB-wells (at a minimum).
 - e. Synoptic surface water and ground water gauging prior to any surface water, ground water and sediment gauging and sampling event.

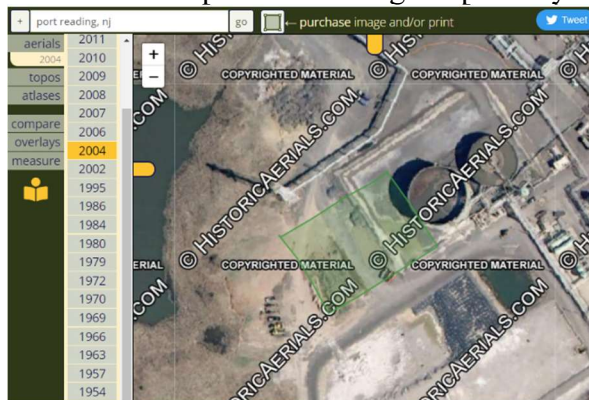
- f. Evaluation of vertical gradients at well clusters and between ground water and surface water.
 - g. Williams and Buckeye Pipeline construction (invert elevations) information to evaluate them as preferential plume migration path.
 - h. The location of the Urban Sewer through the Hess site and adjacent area(s) to Smith Creek Pond with construction information.
7. Characterize potential ground water contaminant migration from the Truck Loading Rack Remediation Management Unit (RMU) to the Detention Basin. Please note, surface water elevations at the Detention Basin were not always higher than ground water elevations.
 - a. Current sample locations are around potential plume discharge zones. Additional sample locations are needed within these areas (see CSM shallow aquifer isopleths for TR-3RR, TR-4R, TR-5 and TR-6 data; 2012 AOC 10 RIW temporary well isopleths). Passive diffusion bag and/or trident probe sampling in the near shore discharge areas is recommended.
 - b. Evaluate preliminary AOC 10 RI data to help determine if there is shallow ground water COC migration around the Detention Basin due to higher surface water elevations. Deeper plume migration represented on CSM isopleths is evident and may be due to lithology or increased vertical gradients in proximity to the Detention Basin.
8. Include the following information on site figures with Detention Basin sample locations. It should be noted that figures from the Envirotrac's 4th quarter 2014 progress report dated November 13, 2014, are good examples of complete figures (specifically Figure 6).
 - a. VOC, SVOC and PCB hot spots shown on CSM figures.
 - b. Historic and current LNAPL recovery areas.
 - c. 1979 crude oil release impact area limits.
 - d. 1991 API Separator release to Detention Basin.
 - e. Historic LNAPL impacts identified in soil borings, monitor well borings, temporary wells, etc.
 - f. Historic and current point source discharge and withdrawal locations from Detention Basin and discharge points to Smith Creek Pond.
 - g. Appendix E – The Photo 3 location is needed on site figures (outfall along northwestern shoreline of Detention Basin)
 - h. Appendix E – The Photo 5 location is needed on site figures (southwestern portion of site outfall to urban sewer not connected to detention basin; “outfall leads to Smith Creek Pond”.
9. Please provide a historic sample summary figure identifying boring, temporary well and sample locations within the entire 1969 crude oil release impact area. EnvirTrac soil boring and temporary wells in the Truck Loading Rack RMU and Southern Remediation Management Unit need to be shown, at a minimum. LNAPL observation locations should be considered in AOC 12 sample locations if ground water flow conditions are toward a surface water body, as well as soil and ground water impacts.

10. There will not be a Class IIB aquifer reclassification for this site as previously discussed in the CSM comments. Chloride ($> 3,000$ mg/L) or TDS ($> 5,000$ mg/L) data may be presented to determine if a Class IIB aquifer classification is applicable for all or some of the aquifer units. Elevated chloride and TDS must be due to natural conditions – not due to site impacts, releases, or processes – to be considered Class IIB. Regardless of classification, sources of ground water contamination require remediation consistent with the TRSR and the Remediation Standards.
11. Soil boring samples at SC-2 and SC-3 identified EPH over residential standards and ecological screening levels. Step out sampling around these discrete locations is proposed. Based on the sample locations within the historic LNAPL impact area from the 1969 crude oil release, additional investigation of the entire area between the southern property line dike and the PSE&G access road is recommended to assess LNAPL impacts. Please see highlighted area below from 1972 photo (post dike construction) and the same area in the 1969 photo. Furthermore, please refer to the ecological- specific comments for further details.



12. A general description of site geology is provided. The CSM includes cross-sections based on formation type. Cross-sections through the investigation area that reflect ground surface elevations changes, boring log lithology, transmissive zones that would influence ground water flow and contaminant migration, with well completion intervals, surface water body limits, pipelines, COC isopleths, etc. are requested.
13. The sediment investigation section stated that no signs of LNAPL or a sheen were observed in any sediment cores, while odors, some staining and elevated PID readings were observed in several cores. This is not consistent with following sediment log descriptions. Please clarify this discrepancy.
- Detention Basin – SB-logs: SB-1, SB-2, SB-4, SB-6 included descriptions of “petroleum-like substance”. These locations need to be highlighted on figures.
 - Smith Creek Pond and Smith Creek – SS-logs:
 - Elevated PID: SS-25 (up to 900 ppm), SS-28 (up to 362 ppm), SS-29 (up to 78), SS-30 (up to 236 ppm), SS-31 (up to 108 ppm), SS-33 (up to 195 ppm).
 - Sheen: SS-20, SS-21, SS-29 (sheen, globules, petroleum like odor)

14. Section 7 states that once the off-site ground water investigation is complete, the analytical results will be evaluated to determine the potential sources. Potential sources and migration paths must be considered when establishing the sample locations.
15. Ground water impacts at the southern site perimeter wells (e.g., along the dike and near the aeration basins) are associated with plume migration from on-site source areas. The four monitor well clusters installed off-site were the first wells installed to assess off-site ground water quality and potential off-site receptor impacts. Furthermore, a limited supplemental ground water remediation investigation is proposed. Delineation of shallow ground water contamination at SC-1 and SC-2 is proposed by installation of SC-5 and SC-6. Additional information for the basis of these well locations is requested considering the low levels of COCs identified at SC-1 and SC-2, and water quality at SC-4. The well locations should be evaluated with additional information. Please provide the following:
 - a. Proposed well locations, existing shallow well locations and ground water contours representing synoptic ground water and surface water gauging events at peak high tide and peak low tide flow.
 - b. Tidal influence evaluation at the SC-, PER- and AB-wells (all aquifer intervals at well clusters) to determine if tidal stage should influence ground water sampling.
 - c. Any preliminary water quality data from the Truck Loading Rack RMU RI, particularly from within the AOC 57 Day Tank Field area.
 - d. Pipeline locations and construction.
16. **Former Site Operations:** The former filter backwash lagoon location on figures is not accurate based on aerial photos – the lagoon partially aligns with the TK-1911 basin.



17. The Location of AOC 78 connection to the Detention Basin/Smith Creek needs to be shown:



18. Please consider the following information in future remedial work:

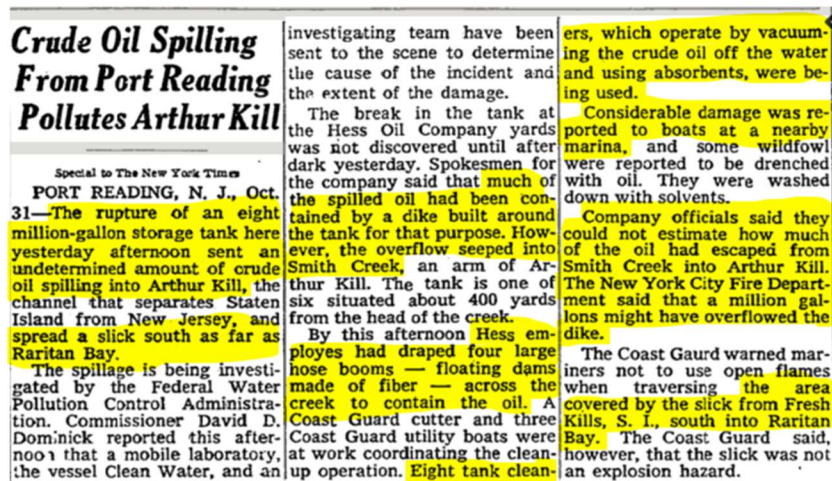
- a. AOC 12 Smith Creek and Detention Basin: The current detention basin dimensions are approximately 800' x 600' and 5-6' in depth. Aerial photos (1957-present) showed that the current detention basin area and represented changes that began circa 1963 including: 1) restriction of the connection of on-site Smith Creek/wetland areas to off-site Smith Creek circa 1963-66; and 2) changes to facility stormwater management and treatment in conjunction with the complete separation of the site from Smith Creek after construction of the dike and Smith Creek Pond.
- b. The entire LNAPL impact area footprint needs to be considered in sampling plans:
1969 AST failure LNAPL impact areas:



1970 photo – channel flow in Smith Creek:



- c. The 1969 AST failure released 8,000,000 gallons of crude oil. An estimated 1,000,000 gallons escaped the AST dike. The New York Times article (below, highlighting added) summarized the release and initial response actions. The description indicates surface water impacts beyond Smith Creek:



Ecological-Specific Comments:

19. The revisions in the new report (2021) addressed some of the Department's concerns on the ESNRs' historical impacts. This AOC remains deficient in identifying and describing the historic and current pathways (e.g., other AOCs impacting the area by erosional features and groundwater). Please include more detail explanations in the Remedial Investigation Report, which will include a revised Ecological Evaluation, on the following:
 - a. Riparian grant information that was not found in this report.
 - b. Description of historical and current pathways accounting for erosional features and overland flow.
 - c. Please confirm that historically there was only one outfall that discharged into the detention basin. Currently the outfall is capped with a concrete plug. It is not clear in the report if draft comment #2 from the previous 2020 comment letter was addressed.
 - d. Please indicate if the proposed samples are located where the mini lagoon used to connect to the detention basin and the American Petroleum Institute separator.
 - e. Most of the groundwater wells for AOC 12 were installed in 2013 or later. The impacts from groundwater plumes, during the last half century of operation, could have impacted the detention basin and/or the former Smith Creek. AOCs near the detention basin, with historically contaminated groundwater, need to be identified and discussed. If the sediment sampling has not been addressed to target those potential discharges, then additional investigations in those areas will be necessary.
20. The historical location of Smith Creek, which previously was open water that was filled/alterd and became a marsh or a vegetated area (an ESNR), needs to be investigated. The Department recommends the following locations need to have additional samples taken.
 1. The figure below displays the area south of the road. Please collect a minimum of two samples where the former Smith Creek used to be.

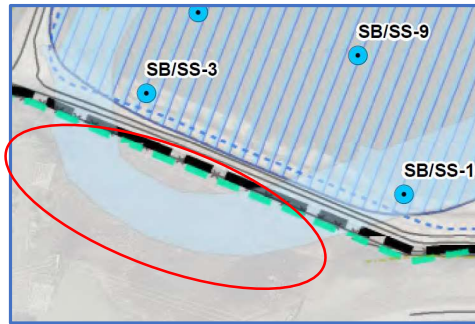


Figure 1- Previous location of Smith Creek prior to 1970, the area within the red circle needs to be sampled.

- b. Please include a minimum of four additional samples in between the proposed sample locations. Please note the proposed samples are approximately 150 to 200 feet apart.



Figure 2- Smith Creek formerly used to flow in between the sample locations proposed. Please include additional sample locations to address the former migration pathway.

21. Please include additional information on the sitewide utility/outfall (yellow hash line). Furthermore, please provide additional information on this feature, connection, and type of discharges.

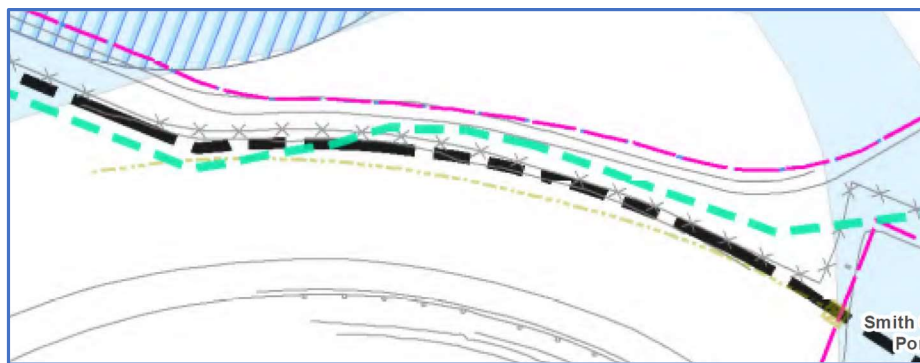


Figure 3- Unidentified sitewide utilities. Imaged cropped from Figure 8.

22. AOC 13 was incorporated into the Former Site Operations Section as a migration pathway. There are 2 proposed samples near or on the former location of AOC 13. Please provide additional information on how the sample locations were selected. The non-ESNRs portion of AOC 13 will need to be addressed in future investigations.
23. The proposed sampling maps do not address the historical and current swales and/or erosional features leading to the detention basin. It is recommended to collect a minimum

of 2-3 samples per feature (Ecological Evaluation Technical Guidance Section (EETG) 5.3.2.2).

24. Please provide additional information on the underground utility line/outfall located in the west area of the detention basin. In addition, at least 2-3 sediment samples need to be collected at the end of the outfall, upgradient and downgradient.
25. Please provide justification for not collecting all the VOC data at the 6–12-inch sample interval, in accordance with the Ecological Evaluation Technical Guidance.
26. The report did not indicate if samples were collected in the locations where photos No. #3 and #5 (appendix E) were taken. If sediment samples were not collected, then please take sediment samples at those locations, or provide adequate justification for not addressing an area potentially impacted by contaminants.
27. Please include a photo location map.
28. **Section 6.0- Ecological Evaluation (pg. 38):** This section indicates that a stand-alone and site-wide Ecological Evaluation Report will be prepared. Please note that a site-wide Ecological Conceptual Site Model has been requested by the Department. The ecological evaluations will be individually submitted as part of each AOC group Remedial Investigation Report, pursuant to N.J.A.C. 7:26E-4.8. All the previous comments regarding the Ecological Evaluations need to be incorporated into the RIR. Please note, this document did not contain the original EE submitted with the RIWP dated 2020.
29. **Section 6.1:** Sediment investigation states “No signs of LNAPL or a sheen were observed in any of the sediment cores. Odors, some staining, and elevated PID readings were observed in several sediment cores.” Please note that odor, staining, EPH/TPH concentrations and elevated PID are lines of evidence identifying the presence of free and residual product. In addition, rainbow sheen was found in the boring sleeves of several cores.
30. **Section 7.2: Supplementary Ecological Investigation, Wetland Soil Sampling-** Please note that other wetlands samples not located in AOC 12 will be investigated in other reports and are not part of this AOC. There is not sufficient information to comment if the location is appropriate. The migration pathway evaluation has not been conducted. This evaluation is usually conducted in the Remedial Investigation phase of those AOCs.
31. **On page 28 and page 34:** the report states “Based on comments provided in the June 9, 2020, BEERA comment letter, the NJDEP requested that the deeper sediment results also be compared to the applicable ESC. However, the ESC should only be used to evaluate potentially negative effects in the biologically active zone. The LSRP does not agree that the data comparison is valid, but the review was conducted, as requested.” The human-health based Soil Remediation Standards, do not apply to sediments. Moreover, the EETG, section 5.4, states that all individual sample data should be compared with the ESC, and, pursuant to N.J.A.C. 7:26E-4.8, horizontal and vertical delineation to the ESC is required. The ecological receptor would be the most impacted by the contaminated sediments. The changes in the sediments from erosion or accretion over time, potential

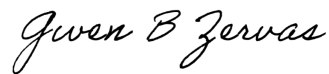
dredging, the fate and transport of the contaminants, and the potential presence of free and/or residual product on this site are important reasons for the need to compare the data to the ESC. The Department appreciates that the LSRP decided to add the ESC to the tables as per NJAC 7:26E.

32. The SC samples are located near or on the ESNRs. Please note that these soil sample locations need to be evaluated as a potential migration pathway to the ESNR or if located in an ESNR will need to be compared to 1,700 mg of EPH/ kg and delineated properly.
33. Sediment sample locations need to be added where historical groundwater plumes were located, and a description will need to be incorporated in the text.

Nothing in this correspondence affects Hess' potential liability and obligations to the State Trustee, the Department, or its Commissioner regarding natural resource injuries, restoration, or damages.

If you have any questions regarding this matter, contact Julia Galayda at Julia.Galayda@dep.nj.gov.

Sincerely,

A handwritten signature in black ink that reads "Gwen B Zervas". The script is cursive and fluid.

Gwen B. Zervas, P.E.

Cc: Julia Galayda, Case Manager
John Virgie, LSRP, Earth Systems
Ann Charles, BEERA
Jill Monroe, BGWPA
Iman Olguin-Lira, BEERA